

MARSHALL STAR

Serving the Marshall Space Flight Center Community

Aug. 29, 2002

Marshall-managed Chandra X-ray Observatory marks third anniversary

by Sherrie Super

A black hole gobbles up matter in our own Milky Way Galaxy. A hot spot of X-rays pulsates from near Jupiter's poles. An intergalactic web of hot gas, hidden from view since the time galaxies formed, is finally revealed.

These scenarios sound like science fiction — but to those familiar with the latest developments in X-ray astronomy, they are just a few of the real-life discoveries made by NASA's Chandra X-ray Observatory during its third year of operation.

"Within the last year, Chandra has revealed another series of never-before-seen phenomena in our galaxy and beyond," said Chandra project scientist Dr. Martin Weisskopf of the Marshall Center.

See *Chandra* on page 4



Photo courtesy TRW, Inc.

An artist's depiction of the Chandra X-ray Observatory in orbit.

Marshall guiding new hypersonics program for NASA

Point-to-point global travel in under two hours ...

by Rick Smith

Imagine taking off from any U.S. airport and landing on any other runway in the world in less than two hours. Or making a quick hop from that same airport to the International Space Station and back — a trip that normally

takes days or weeks — to drop off science experiments, provisions and new equipment.

Sound far-fetched?

Not anymore. Technology now being developed by NASA and its partners could — within two decades — achieve such rapid trip times, yielding limitless possibilities for international travel, commerce and access to space.

NASA's "Hyper-X" series of technology flight demonstrators are expected to yield a new generation of vehicles that routinely fly about 100,000 feet above Earth's surface and reach sustained travel speeds in excess of Mach 5, or about 3,750 mph — the point at which "supersonic" flight becomes "hypersonic" flight.

It also may be the point at which traditional air transportation becomes as outmoded as the covered wagon.

Technologies for 21st century flight

Revolutionizing the way we gain access to space is NASA's primary goal for the Hypersonics Investment Area, managed for NASA by the Advanced Space Transportation Program at the Marshall Center.



Marshall Imaging Services

The X-43C hypersonic flight demonstrator

See *Hypersonic* on page 3

NASA scientist Robbie Hood earns 2002 Women of Color honor

by Sherrie Super

Robbie Hood, a NASA atmospheric scientist and hurricane hunter at the National Space Science and Technology Center, was one of 12 NASA women honored recently for achievements in government and defense.

Presented at the second annual Women of Color Government and

Technology Awards conference July 18-19 in Washington, D.C., the awards recognize contributions made by minority women in these traditionally male-dominated fields.

The event, sponsored by Career Communications Group, Inc. in Baltimore, highlights success stories among women of color in an effort to reconfirm commitment to equality and motivate other women to higher levels in the workplace.

One-eighth Cherokee, Hood is a direct descendant of John Ross, the first elected chief of the Cherokee Nation. Ross, who held the office for nearly 40 years, is famous for leading the Cherokees on the Trail of Tears — their forced relocation from



Hood

Photo by Dennis Olive, NASA/Marshall Center

the Southeastern United States to present-day Oklahoma in 1838-1839.

“I was honored to receive this recognition,” Hood said. “By focusing on positive contributions made by people with diverse backgrounds, it may help inspire the next generation of female scientists and engineers.”

Based at the National Space Science and Technology Center, Hood is an employee of the Marshall Center. She joined Marshall in 1987 after working as a meteorologist and university researcher. Since then, she has participated in several NASA studies that seek a better understanding of our weather.

Most recently, she served as lead mission scientist in NASA’s fourth

Convection And Moisture Experiment (CAMEX) study — a mission that united

researchers from 10 universities, five NASA centers and the National Oceanic and Atmospheric Administration toward the common goal of improving hurricane prediction.

The writer, employed by ASRI, supports the Media Relations Department.

Outstanding women achievers honored

from the Equal Opportunity Office

Five outstanding women achievers from the Marshall Center were honored this week during Women’s Equality Day ceremonies.

The Outstanding Women Achiever recipients from Marshall are:

- Professional - Lorna Jackson - Engineering Directorate
- Administrative - Inge Kuberg - Center Operations

Directorate

- Clerical - (tie) Dawn Christian - Science Directorate and Tammy Simmons - Chief

Counsel Office

- Supervisor – Dr. Amanda Goodson

Nominations were solicited and received from across the Marshall Center and a panel of their peers individually ranked the winners.



Jackson



Kuberg



Goodson



Christian



Simmons



Courtesy photo

Who am I?

I was born in Plainville, Ga. Here I am holding my younger brother, when I was 3 years old. I have driven a stock car in a race at Huntsville Motor Speedway. I also rode competitively in motorcycle trials and enduros. Although a physics major in college, I won the college prize for creative literature as a sophomore. I have a daughter and enjoy genealogical research and fishing. To see who I am, go to page 6.

Pete Rodriguez named deputy of Marshall's SM&T

from the Human Resources Department

Dr. Pedro "Pete" Rodríguez, has been named deputy manager of the Structures, Mechanics, and Thermal Department (SM&T) at the Marshall Center.

Rodríguez began his career in structural design at Marshall in 1976. He left Marshall after accepting appointments with Pratt and Whitney and later with United Space Boosters Inc.

In 1981, he returned to the Marshall Center and was assigned to the Structures and Propulsion Laboratory. He is credited with making important structural developments for the Hubble Space Telescope maintenance mission, the Advanced X-ray

Astrophysical Facility-Spectroscopy Observatory Spacecraft, the Space Shuttle Solid Rocket boosters, and the redesign of the Solid Rocket Motor.

More recently, Rodríguez served as chief of the Structural Design Division, and as Agency expert and staff consultant in structural systems design and development. He currently serves as Center and Agency authority for the Reusable Launch Vehicle (RLV) Architecture Integrated Contract with Northrop-Grumman Corp. within the Second Generation RLV Program.

Rodríguez is a graduate of NASA's 1997 Senior Executive Service Candidate Development Program. He has received many awards during his career including



Marshall Imaging Services

Rodríguez

the Silver Snoopy Award, Marshall Hispanic Engineer of the Year Award, and the NASA Exceptional Service Medal.

Hypersonic

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The Hypersonics Investment Area — which includes leading-edge partners in industry and academia — will support future-generation reusable launch vehicles and improved access to space. Over the next 15-18 years, the NASA team will develop, test and fly a series of hypersonic flight demonstrators — the Hyper-X series — powered by air-breathing rocket- or turbine-based engines.

Air-breathing engines for hypersonic applications are known as "combined cycle" systems because they use a graduating series of propulsion systems in flight to reach an optimum travel speed, or to leave the atmosphere altogether. Air-breathing engines achieve their efficiency gains over rocket systems by getting their oxygen for combustion from the atmosphere, as opposed to a rocket, which must carry its oxygen. These systems capture air from the atmosphere during flight — an arrangement that improves efficiency up to five or 10 times greater than that of conventional chemical rockets.

Once a hypersonic vehicle has accelerated to more than twice the speed of sound, the turbine or rockets are turned off, and the engine relies solely on oxygen in the atmosphere to burn fuel. When the vehicle has accelerated to more than 10-15 times the speed of sound, the engine converts to a conventional rocket-powered system to propel the craft into orbit or sustain its top suborbital flight speed.

Despite the astounding paradigm shift it promises for suborbital and orbital flight, the concept of hypersonic flight is not a new one. NASA's hypersonics program is built on research dating back to the 1950s.

But the new effort — leveraging technology resources and manufacturing capabilities unavailable 30 years ago — is intended to yield practical results before mid-century: a future fleet of government and commercial hypersonic vehicles,

traveling between dozens or even hundreds of "skyports" around the world — and beyond it.

The Hyper-X series

NASA's planned series of X-43 hypersonic flight demonstrators could include three air-breathing vehicles.

The X-43A, an unpowered research craft mounted atop a modified Pegasus booster rocket, was first flown in June 2001. During the flight, an in-flight incident forced the mission to be aborted. NASA has planned three X-43A flights. Two more X-43A flight demonstrators, built in early 2002, are being prepared for flight testing at NASA's Dryden Flight Research Center in Edwards, Calif. Fueled by hydrogen, the X-43A is intended to achieve Mach 7 and possibly Mach 10, or speeds of approximately 5,000 and 7,500 mph, respectively.

The X-43C demonstrator, powered by a scramjet engine developed by the U.S. Air Force, is now in development. The X-43C is expected to accelerate from Mach 5 to Mach 7, reaching a maximum potential speed of about 5,000 mph. NASA will begin flight-testing the X-43C in 2008.

The X-43B — the largest of the Hyper-X test vehicles — could be developed in the coming decade.

All X-43 flight demonstrator projects are managed by NASA's Langley Research Center in Hampton, Va.

NASA expects to spend about \$700 million on hypersonics research and development over the next five years, according to Steve Cook, deputy manager of Marshall's Advanced Space Transportation Program. Cook anticipates the investment will yield unprecedented results, opening up new commercial markets for industry, furthering human and robotic exploration of the solar system and significantly improving national security.

The writer, employed by ASRI, supports the Media Relations Department.

The man who 'trimmed' the space program

Art Hodge enjoying retirement after 38 years as Marshall barber

by Jonathan Baggs

Walking into Art Hodge's home on a summer day in the Harvest community is akin to entering an oasis of soft silence.

Afternoon sunlight plays just right on many decorative objects – each placed in a certain way for a reason. The home's atmosphere is much like the man himself — quiet, orderly but with a distinctive flare for the artistic.

Hodge, 63, also has a distinctive flare for cutting hair. The man who "trimmed" the space program at Marshall has finally hung up his barber shears after cutting the hair of Center employees for 38 years.

Hodge came to work at Marshall when a barbershop opened in October 1963 in the basement of Bldg. 4200.

"I was working for Billy Beard, who had the contract for many years," Hodge said. "I was 24 or 25 years old. It was the 'Marshall Center Barbershop' and someone in Legal said, 'You can't use that name' so then it became S&H Barbershop. It was S&H for 20 years or so."

S&H stood for "Saddler and Hodge." Ron Saddler still cuts hair at Marshall, though the barbershop moved about 10 years ago to Bldg. 4203 and is now known as "Chatterbox Barber and Styling."

See *Hodge* on page 5



Photo by Emmett Given, NASA/Marshall Center

Hodge in his art studio

Chandra

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"When you combine recent discoveries with the secrets revealed during the observatory's first two years in orbit, it's amazing how much Chandra has told us about the universe in a relatively short period of time."

One discovery was a view of a supermassive black hole devouring material in the Milky Way Galaxy – a spectacle witnessed for the first time when Chandra observed a rapid X-ray flare emitted from the direction of the black hole residing at our galaxy's center. In a few minutes, Sagittarius A, a source of radio emission believed to be associated with the black hole, became 45 times brighter in X-rays, before declining to pre-flare levels a few hours later, offering astronomers a never-before-seen view of the energetic processes surrounding this supermassive black hole.

"When we launched the Chandra Observatory, we attempted to explain its amazing capabilities in Earthly terms, such as the fact it can 'see' so well, it's like someone reading the letters of a stop sign 12 miles away," said Chandra Program Manager Tony Lavoie of the Marshall Center. "Now that the observatory has been in orbit for three years, we have unearthly proof of the technological marvel Chandra really is. Not only has it continued to operate smoothly and efficiently, it has provided the highest quality X-ray images ever made. Now, we're not talking about stop signs, but rather black holes, star systems, galaxies and planets."

Using the Chandra Observatory, astronomers discovered a pulsating hot spot of X-rays in the polar regions of Jupiter's upper atmosphere and uncovered evidence the X-ray source is not arising from where scientists previously believed.

By revealing that most of the X-rays come from a hot spot appearing at a fixed location near Jupiter's north magnetic pole, Chandra disproved the previous model, which placed the

emission at lower latitude of the planet's atmosphere and had no knowledge the X-rays were pulsed.

"By pinpointing the location of Jupiter's hot spot, Chandra ruled out the existing explanation for the planet's X-ray emission," Weisskopf said. Now we must search for a new process that explains Jupiter's X-rays. When we accomplish that, we can assemble yet another piece to the cosmic puzzle."

One piece fell into place when Chandra discovered part of an intergalactic web of hot gas and dark matter that contains most of the material in the universe. The hot gas, which appeared like fog in channels carved by rivers of gravity, has been hidden from view since the galaxies formed.

These observations, together with ultraviolet observations, helped shed new light on how the universe evolved. The discovery of the hot gas may enable astronomers to map the distribution of dark matter in the universe and perhaps understand its origin.

These recent discoveries are in addition to findings made by Chandra during its first two years of operation. Initial highlights include discovery of an X-ray ring around the Crab Nebula, finding the most distant X-ray cluster of galaxies, capturing the deepest X-ray images ever recorded and discovering a new size of black hole.

Launched in July 1999, Chandra orbits the Earth every 64 hours. At its highest point, Chandra's orbit is 200 times higher than that of its visible-light-gathering sister, the Hubble Space Telescope.

The Marshall Center manages the Chandra program. TRW, Inc. of Redondo Beach, Calif., is the spacecraft's prime contractor. The Smithsonian Astrophysical Observatory's Chandra X-ray Center in Cambridge, Mass., controls science and flight operations from Cambridge, Mass.

The writer, employed by ASRI, supports the Media Relations Department.

Hodge

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Besides Saddler, the current staff consists of Lisa Hastings and Sonya Hutchens, who offer cuts, curls, perms and coloring.

When Hodge started, however, the preferred cut was the “flat top” and he has fond memories of some of the heads he’s had the pleasure to know.

“I cut (Wernher) von Braun’s hair,” Hodge said. “He was a very interesting fellow. He didn’t talk too much. He never knew the price of a haircut and he never had any money.”

Von Braun, Marshall’s first director, always wanted a trim instead of a full-fledged “cut,” according to Hodge.

Von Braun’s demeanor suited Hodge just fine. “Some barbers talk,” Hodge said. “I never talked too much. (Von Braun) usually had something to read. If you spent more than 10 minutes in my chair we were both wasting time.

Dr. (William R.) Lucas was another interesting Center director – very conversational. He always liked to get his hair cut at the end of the day – always at 4:30.”

Hodge doesn’t know how many haircuts he’s given. Sometimes he would cut 25 to 40 heads a day. He guesses it must be in the “multiple thousands.”

As he got older, Hodge started to cut back his hours at the shop. Saying good-bye to his customers was the hardest part of finally leaving the Marshall Center.

“I have made a lot of lasting friendships over the years,” Hodge said. “The fact that I had such good customers was one of the reasons I stayed on as long as I did. But it had gotten to the point that most everyone who was there when I started is retired now.”

Hodge is enjoying his own retirement but he’s forging a new career as he pursues a passion for hand-tinted photography. He and his wife, Pam – a watercolorist herself – recently were the featured artists for the “Limelight Series” at the Huntsville Art League Gallery and Visual Art Center.

Around his home, and in his studio, are black and white photographs that he’s hand-tinted. Unlike some artists of this genre, Hodge only hand-tints, or colors, certain portions of his photographs – using the art of “less is more” to reach his audience.

The art form requires a steady hand, and Hodge’s years of

trimming hair prepared him well for steadying a brush.

“It takes a lot of practice,” Hodge said, studying one of his works in a spacious studio near his main house. “The way I hand-tint is a different look from anyone else’s that I’ve seen. Most will do pastels and mine are more vivid, plus I leave a lot of mine

black and white so the colors leap out at you.”

A careful observer at the Marshall Center will find Hodge’s prints hanging in a number of offices. He also travels to several art shows with his wife, where they display their talents.

For Hodge, being a barber and an artist is much the same. “Both are visual and with both you use your hands to be creative,” he said. “Really, they go hand-in-hand. Cutting hair is a work of art – photography is a work of art.”

As Hodge led the way back to the main house, he glanced at his watch. Habit perhaps. It was close to 4:30 p.m. — and he paused a

moment to reflect.

“I’ve enjoyed being a barber,” Hodge said. “It was a wonderful occupation. I’ve met and had some wonderful customers and it is those friendships that I miss. Basically, it was time to move on and start another phase of my life.”

Just before Hodge disappeared back into his house, he responded to one last question: “Who cuts his hair?”

Hodge grinned, turned the doorknob, and said, “Presently, I’m looking for a barber.”

The writer, employed by ASRI, is the editor of the Marshall Star.



Art Hodge is hard at work on customer Max Croft seated in the first chair on the left, while barbers Don Tilkeing, center, and Ron Saddler, right, tend to their customers at the Marshall Center in the early 1960s. Saddler is the only one of the three still working as a barber at Marshall.

Marshall Imaging Services



Photo by Dennis Olive, NASA/Marshall Center

The current staff of “Chatterbox Barber and Styling” in Bldg. 4203 is, from left, Sonya Hutchens, Ron Saddler and Lisa Hastings.

Obituaries

Burton, Edward H., 95, of Huntsville, died Aug. 19. He retired from the Marshall Center in 1973 where he was a supervisor, aerospace engineering technician.

Jones, Westa Annette, 53, of Huntsville, died Aug. 23. She was the configuration control manager for 30 years for Teledyne Brown Engineering on the Propellants, Pressurants and Calibration contract at the Marshall Center.

Burial was in Shady Grove Cemetery with the Rev. Talmadge Clayton officiating.

She is survived by her parents, Bruce and Louise Jones; two brothers, Bruce and Anthony Jones, both of Huntsville; and two sisters, Linda Claunch of Huntsville and Rhonda Odom of Birmingham.



Photo by Doug Stoffer, NASA/Marshall Center

Flight projects awards

The Flight Projects Directorate recently awarded "Super Star" awards to six members of its team. From left are Jay Perry, Lisa Watson, Greg Wright, Joel Best, Karen Hicks, Peggy Rickles and Dr. Jan Davis, director of the Flight Projects Directorate.

Job opportunities

MS02C0211, AST, Aerospace Flight Systems. GS-861-15, Flight Projects Directorate, Flight Systems Department, Environmental Control and Life Support Systems (ECLSS) Group. Competitive Placement Plan. Closes Aug. 30.

MS02C0212, AST, Aerospace Vehicle Propulsion Systems. GS-0861-14, Second Generation RLV Program Office, Propulsion Office, UP30. Competitive Placement Plan. Closes Sept. 6.

MS02C0213, AST, Aerospace Vehicle Propulsion Systems. GS-0861-14, Second Generation RLV Program Office, Propulsion Office, UP30. Competitive Placement Plan. Closes Sept. 6.

MS02C0214, SUPV., Budge Analyst. GS-0560-15. Salary \$90,078-\$117,105 per year. Office of Chief Financial Officer, Budget Integration Office, RS60. Closes Sept. 3.

MS02C0215, Operations Support Specialist. GS-301-12, Flight Projects Directorate, Business Management Office. Competitive Placement Plan. Closes Sept. 10.

MS02C0217, Supervisory, AST Experimental Facilities Development. GS-801-15, Center Operations Directorate, Facilities Engineering Department. Competitive Placement Plan. Closes Sept. 4.

MS02C0218, Supervisory, AST Experimental Facilities Development. GS-801-15, Center Operations Directorate, Facilities Engineering Department. Competitive Placement Plan. Closes Sept. 4.

NASA history on-line

Histories of various NASA programs are now online. This week's featured title is "The Voyage of Mariner 10: Mission to Venus and Mercury" (SP-424, 1978) by James A. Dunne and Eric Burgess. It is at <http://history.nasa.gov/SP-424/sp424.htm>

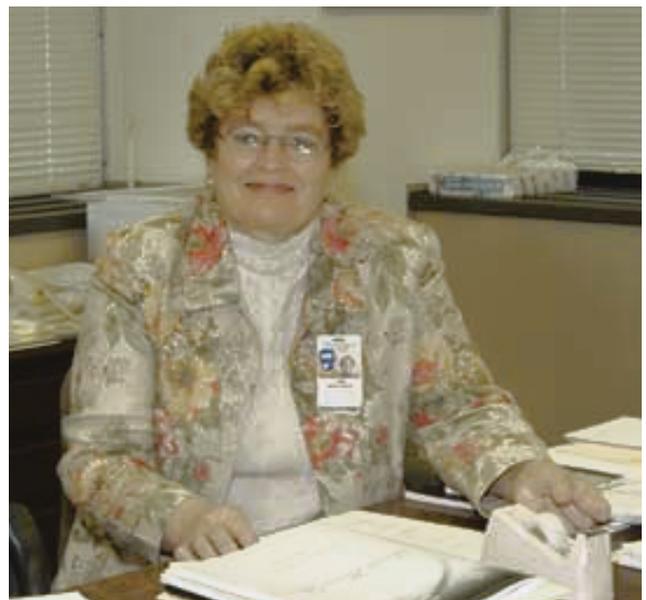


Photo by Doug Stoffer, NASA/Marshall Center

Who am I?

Dr. Ann Whitaker is director of the Marshall Center's Science Directorate. She supervises more than 325 civil servants and is a former deputy space science director. She is a Fellow in the American Institute of Aeronautics and Astronautics, holds Meritorious Rank, and received the NASA Medal for Exceptional Engineering Achievement and the NASA Exceptional Service Medal.

Center Announcements

AMPET Conference registration now open

All Marshall team members are invited to attend the fifth Conference on Aerospace Materials, Processes and Environmental Technology (AMPET) on Sept. 16-18 at the Von Braun Center. Registration is open and must be completed by Sept. 2. Civil servants interested in attending the conference must submit a Conference Form 1265 to CD20-ITI/Linda Law. There is no charge for civil servants. The cost for contract employees is \$345 per person. Online registration and on-site registration is available for non-Marshall employees. For more information, go to <http://ampet.msfc.nasa.gov> or call Linda Law at 544-3930.

Donations accepted for CFC silent auction

The Tennessee Valley Combined Federal Campaign office will conduct an online auction to raise funds for local charities during its fall campaign. The CFC office is looking for donations of paintings, flower arrangements, collectibles, antiques, etc. For more information, call Gay Money at 876-9143 or Phyllis Henley at 842-1037.

Free blood pressure check

The Marshall Center now has a self-checking blood pressure machine in the Wellness Center, Bldg. 4315. All Marshall team members are welcome to use the machine.

'Tech fair' set at Marshall on Sept. 5

A tech fair will be from 10 a.m.-3 p.m. on Sept. 5 at Marshall, Bldg. 4203, Room 4002. All contractor and civil service employees are welcome to attend the free event, which consists of several technical seminars and demonstrations of some of the latest technologies. Application engineers also will be on hand to answer questions. The tech fair is sponsored by ASRI and Cross Automation. For more information or to register

for the event, go to http://www.crossautomation.com/enews/special/AL_Tech_Fair_0902.htm or call ASRI at 551-0008.

Instrumentation retirees meeting

Retirees and friends of the Instrumentation Division Astrionics Lab will meet at 11 a.m. on Sept. 3 at the Redstone Golf Course coffee shop. The group will begin holding monthly meetings on the first Tuesday of each month thereafter. For information, call Tom Escue at 256-232-1549.

SOLAR Web site available for online learning and resources

The SOLAR Web site has 90 courses available to Marshall team members for online training and resources. The courses include ethics, export control, financial and resource management, information technology security, occupational health and many other topics. Other courses are in development and will become available during the fall. Mandatory courses, such as ITS for Managers 2002, also are available. Visit the SOLAR Web site at <https://solar.msfc.nasa.gov>

Employee decals must be updated by Friday

All employees, civil service and contractor, at the Marshall Center must have their vehicle decals updated by Friday. Information can be updated online at <http://medis.msfc.nasa.gov/doda/> or a hard copy may be used instead. Civil service and retirees will use MSFC Form 4 and contractors will use MSFC Form 1739. Retirees may request an MSFC Form 4 by mail by calling 544-2090.

USMDC looking for police officers

The U.S. Army Space and Missile Defense Command is looking for police officers for its new location at Fort Greely, Alaska. The positions are in the GS-4/GS-7 level and are open to all qualifying individuals. For more information about the vacancies, visit the Office of

Personnel Management Web site at www.opm.gov or call 1-907-353-7201.

Freeze on codes for stock withdrawals in effect after Friday

In conjunction with the conversion by the Marshall Center to the Integrated Financial Management Program SAP Core Financial System in fiscal year 2003, there will be no new codes, code changes or code deletions processed for the Stock Withdrawal Table Codes in MARTS after Friday. For more information, call Donna Jackson at 544-7305.

FY03 needs assessment online

The annual Center training, organization development and conference needs assessment will be available through Sept. 6. Data collected by the tool will: automatically generate Individual Development Plans for each participant; allow employees to influence Center-sponsored developmental activities; provide information to make strategic workforce development decisions; align developmental offerings with business and customer needs; help maximize the Center's investment in workforce development; and provide employees with advance notice or priority consideration for most scheduled programs. The tool and reference guide are at http://eodd.msfc.nasa.gov/TODC_Survey/index.html. For more information, call 544-2622.

Oktoberfest crafts vendors needed

Oktoberfest on Sept. 12-15 needs arts and crafts vendors. For more information, call Brandie DeRemer at 313-1202 or Diane Campbell at 876-5492 or go to www.redstonemwr.com

Soldatenstube offering take-out

Soldatenstube German Restaurant on Redstone Arsenal is offering take-out meals on Thursdays-Saturdays after 4:30 p.m. For evening dining reservations, call 881-5181. Dinner hours are 5:30-9 p.m. Wednesdays-Saturdays with lunch on Thursdays only from 10:30 a.m.-1 p.m.

Employee Ads

Miscellaneous

- ★ Maple dinette set, 48" round table w/ Formica top, five captain's chairs, \$375. 883-5114
- ★ Baker's rack, 6' tall, 4 glass shelves, \$250; perfume bottle collection, \$5 each. 519-7041
- ★ Alto saxophone, Vito by LeBlanc, played once, hard case and strap, \$900. 772-1843
- ★ Piano, \$975. 971-6425
- ★ Four Auburn vs. Miss. St. football tickets for Sept. 19 in Starkville. Regular price. 256-852-0666
- ★ Gateway CrystalScan 700, 17-inch color monitor, \$75. 880-0438
- ★ Chrome Craft kitchen table w/leaf, 4 naugahyde chairs; Sears 10-speed bike, 26", men's. 881-9421
- ★ 1991 Dynasty boat, 19.5', I/O, 3.7L Mercruiser, trailer included, \$5,800. 881-3811
- ★ Kitchen table w/leaf and 4 chairs, \$75; Hammer Dulcimer, \$500. 518-9194
- ★ Auburn football tickets, Western Carolina, two tickets, \$30 each. 922-1204
- ★ Protecto brand bed liner for full size long bed pickup, \$35. Call Bugg/883-7695
- ★ New HP3820 Deskjet printer in sealed box, \$90. 468-3749
- ★ Pioneer floor speakers, Model CS-9001, 150 Watts, \$50. 533-9683
- ★ Schwinn exercise bike, air-dyne or evolution. 971-0499
- ★ Upright freezer, non-frostless, 20 cu. ft., \$50. 837-0958 after 5 p.m.
- ★ GE mini-fridge w/freezer, black, \$79. 256-653-2820
- ★ Bose 901 speakers, stands, amps oak finish, \$1,000. 922-1424
- ★ National Geographic magazines, 25 cents each; Reader's Digest condensed books, \$1 each. 881-6040
- ★ Football tickets: two each, Alabama vs. MTSU, 8/31/02, Legion Field, Birmingham, \$30 each. 830-8435
- ★ Car seat, \$20; umbrella stroller, \$5; two

- high chairs, \$15 each. 233-5279 between 6-8 p.m.
- ★ Lakeland antique loveseat from the late 1700s, \$300. 859-2722/683-2160
- ★ 1973 Gibson J-50 acoustic guitar, \$995. 828-9486
- ★ iMac Indigo, Lexmark Z23 printer and UMAX Astro scanner, \$700. 971-2243/656-5552
- ★ Conover/Cable console piano, good key action and sound, mahogany finish, \$1,300. 859-0729
- ★ Ticket to U.S. Grand Prix Indianapolis, 9/29/02, Turn 1, Grandstand J, \$85 face value. 881-1249
- ★ Clayton Marcus sofa, plaid, \$400; floral pattern sofa, \$250; Lazyboy wingback recliner, blue, \$200. 230-6846
- ★ Willie & Max black leather motorcycle saddle bags, \$70. 461-8369
- ★ Go-cart, two-seated, 5HP, \$250. 256-498-5089
- ★ Compaq laptop, 850MHz AMD Duron, 10Gig HD, 14.1 screen, 56K Modem, Case, printer, \$1,200. 881-3661
- ★ Women's golf clubs, 11 MacGregor irons, \$25; 4 Hagen woods, \$25; bag, \$30. 533-4824 evenings
- ★ Brunswick paragon oak pool table, leather-wrapped pockets, cherry finish w/ navy blue felt, \$2,000. 509-3392
- ★ Pent. 266HMz, 98mb, 3.2GB harddrive, sound, video, modem, keyboard, mouse, 52Xcd, floppy, \$250. 326-8259/489-0914

Vehicles

- ★ Nissan Pathfinder SE, 3.5L V6, 27.6K miles, burgundy, warranty, Bose CD changer, \$21,300. 837-4524/E. Hanson
- ★ 1993 Nissan Kingcab, 140K miles, a/c, 5-speed, tinted windows, bed-liner, tool box, Sony CD, \$3,000. 880-9888
- ★ 1997 Ford Ranger XLT, 5-speed, 32K miles, a/c, alloy wheels, garaged, \$5,450. 256-753-2278
- ★ 1989 Pontiac Grand Prix, silver, PD, 2-door, 176K miles, \$1,800. 851-7406
- ★ 1991 Lincoln Town Car, fully loaded,

- high miles, \$1,000 obo. 852-4656/852-0996
- ★ 2001 Durango, 31K miles, all options except 4WD or sunroof, \$21,500. 895-2959
- ★ 1948 Chevy Fleetline Aero-sedan, all there but aged, \$1,300 obo. 256-773-0109
- ★ 1997 Ford F150 XLT, 4x2, Super Cab, 4.6L/V8, auto, 80K miles, green, \$12,500. 881-5093
- ★ 2000 Chevrolet Silverado Z71 extended cab truck, off-road package, loaded, \$21,000. 830-1844
- ★ 1991 Honda Accord LX, 4-door, sedan, 120K miles, \$4,900. 883-8179
- ★ 1990 Pathfinder SE, 2-door, red, 5-speed, 4WD, 168K miles, new tires, grill guard, \$4,000. 256-864-3133
- ★ 2002 Chevy Trailblazer LS, 10K miles, auto, CD/cassette, loaded, sandalwood, \$24,000 or take-up payments. 565-9672
- ★ 1990 Chevrolet S-10 pickup, 2-door, STD cab SB, 57.7K miles, \$2,050. 883-8179
- ★ 2001 Chevy S10, XR2, 4x4, black, bedliner, CD, pw/pl, air, 5-speed, 19.6K miles, \$19,300. 256-746-9443
- ★ 1999 Dodge 2500 4x4, SLT, diesel, ext cab, am/fm/CD, 5-speed, 96K miles, \$19,500. 931-732-4742

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- ★ Ride to work; 7 a.m.-3:30 p.m. or 7:30 a.m.-4 p.m., will pay \$8 per day. 534-5398/544-3670

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- ★ Concrete slab, all sizes, good for landscaping, fill, or erosion control. Call Keith/880-6335

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- ★ Eyeglasses with brown frames in brown case. 430-6842

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